

CLAIMS

Claim 1 An apparatus for conveying a non-free flowing, heterogeneous, multicomponent, earth extracted paste comprising:

 a first pressure vessel adapted to receive said non-free flowing paste;

 said first pressure vessel being further adapted to allow a compressed conveyance gas to be introduced therein as the sole means for inducing movement of said paste in said first vessel whereby at least a portion of said non-free flowing paste is discharged from the first vessel.

Claim 2 The apparatus of claim 1 wherein the first vessel has a conical portion defining a cone angle selected to enable mass flow of said non-free flowing paste in said vessel.

Claim 3 The apparatus of claim 1 comprising

 a first conduit connected to the first pressure vessel to enable said discharge of said non-free flowing paste from said first vessel.

Claim 4 The apparatus of claim 1 including

 a second pressure vessel adapted to receive said non-free flowing paste discharged from said first vessel.

Claim 5 The apparatus of claim 4 wherein

 said second pressure vessel is adapted to allow a compressed conveyance gas to be introduced therein as the sole means for inducing movement of said paste in said second vessel whereby at least a portion of said non-free flowing paste is discharged from the second vessel.

Claim 6 The apparatus of claim 5 wherein the second vessel has a conical portion defining a cone angle selected to enable mass flow of said non-free flowing paste in said vessel.

Claim 7 The apparatus of claim 5 comprising
a second conduit connected to the second pressure vessel to enable said discharge of said non-free flowing paste from said second vessel.

Claim 8 The apparatus of claim 1 wherein the first vessel is adapted to withstand a pressure of about 4 bar to about 8 bar.

Claim 9 The apparatus of claim 5 wherein the second vessel is adapted to withstand a pressure of about 4 bar to about 8 bar.

Claim 10 The apparatus of claim 1 comprising
means for transporting the first vessel to a discharge station at which said compressed conveyance gas is introduced into the first vessel to discharge said non-free flowing paste from the first vessel.

Claim 11 The apparatus of claim 4 comprising
means for transporting the second vessel to a discharge station at which said compressed conveyance gas is introduced into the second vessel to discharge said non-free flowing paste from the second vessel.

Claim 12 A system for conveying a non-free flowing, heterogeneous, multicomponent, earth extracted paste comprising:

an apparatus including a first pressure vessel adapted to receive said non-free flowing paste;

said first pressure vessel being further adapted to allow a compressed conveyance gas to be introduced therein as the sole means for inducing movement of said paste in said first vessel whereby at least a portion of said non-free flowing paste is discharged from the first vessel.

Claim 13 The system of claim 12 comprising

a second pressure vessel adapted to receive said non-free flowing paste discharged from said first vessel.

Claim 14 The system of claim 13 wherein said second pressure vessel is adapted to allow a compressed conveyance gas to be introduced therein as the sole means for inducing movement of said paste in said second vessel whereby at least a portion of said non-free flowing paste is discharged from the second vessel.

Claim 15 The system of claim 13 comprising

means for transferring said non-free flowing paste from said second vessel into a third vessel.

Claim 16 The system of claim 15 wherein said means for transferring said non-free flowing paste into said third vessel comprises a conduit.

Claim 17 The system of claim 12 comprising
means for transporting the first vessel to a discharge station; and
means at said discharge station for introducing said compressed conveyance gas into the
first vessel to discharge said non-free flowing paste from the first vessel.

Claim 18 The system of claim 13 comprising
means for transporting the second vessel to a discharge station; and
means at said discharge station for introducing said compressed conveyance gas into the
second vessel to discharge said non-free flowing paste from the second vessel.

Claim 19 The system of claim 12 wherein the first vessel has a conical portion
defining a cone angle selected to enable mass flow of said non-free flowing paste in said vessel.

Claim 20 The system of claim 13 wherein the second vessel has a conical portion
defining a cone angle selected to enable mass flow of said non-free flowing paste in said vessel.